HEAT INJURY PREVENTION PROGRAM

A Company

CPT James J. Jones
Company Commander

HEAT INJURY

CATEGORIES

- **HEAT CRAMPS**
- **HEAT EXHAUSTION**
- **HEAT STROKE**
- **NOTE: <u>SUNBURN</u>, While not a heat injury has a significant effect on soldiers in a hot weather environment.**

HEAT CRAMPS
SYMPTOMS

- **PAINFUL MUSCLE CRAMPS OF THE ARMS, LEGS AND ABDOMEN**
- **EXCESSIVE SWEATING, MOIST SKIN**
- **EXTREME THIRST**

HEAT CRAMPS
FIRST AID

- **MOVE CASUALTY TO SHADE**
- **LOOSEN CLOTHING**
- **HAVE CASUALTY SLOWLY CONSUME ONE CANTEEN OF WATER**
- **SEEK MEDICAL AID IF SYMPTOMS CONTINUE**

HEAT EXHAUSTION

SYMPTOMS

- PROFUSE SWEATING WITH PALE, MOIST SKIN
- HEADACHE
- WEAKNESS
- DIZZINESS
- LOSS OF APPETITE
- ELEVATED TEMPERATURE
- RAPID PULSE
- ANXIETY
- HEAT CRAMPS
- NAUSEA, WITH OR WITHOUT VOMITING
- URGE TO DEFECATE
- CHILLS
- RAPID BREATHING
- TINGLING OF THE HANDS/FEET
- CONFUSION

HEAT EXHAUSTION
FIRST AID

- **MOVE THE CASUALTY TO A COOL SHADY AREA OR IMPROVISE SHADE**
- **LOOSEN OR REMOVE THE CASUALTY'S CLOTHING AND BOOTS**
- **POUR WATER ON THE CASUALTY AND FAN**
- **HAVE THE CASUALTY SLOWLY DRINK AT LEAST ONE CANTEEN OF COOL WATER**
- **ELEVATE THE CASUALTY'S LEGS**
- **MONITOR THE CASUALTY AND ALWAYS EVACUATE**

HEAT STROKE
SYMPTOMS

- **RED (FLUSHED), HOT, DRY SKIN**
- **ELEVATED TEMPERATURE**
- **RAPID BREATHING**
- **STAGGERING, WEAKNESS**
- **NAUSEA/VOMITING**
- **HEADACHE, DIZZINESS, CONFUSION**
- **WEAK AND RAPID PULSE**
- **LOSS OF CONSCIOUSNESS, SEIZURES**

HEAT STROKE
FIRST AID

- **HEAT STROKE IS A MEDICAL EMERGENCY AND MUST BE EVACUATED IMMEDIATELY. COOLING MEASURES WILL BE STARTED IMMEDIATELY**
- **MOVE THE CASUALTY TO A COOL OR SHADY AREA OR IMPROVISE SHADE**
- **LOOSEN OR REMOVE THE CASUALTY'S CLOTHING**
- **ELEVATE THE CASUALTY'S LEGS**
- **IF CONSCIOUS, HAVE THEM SLOWLY DRINK AT LEAST ONE CANTEEN OF WATER**

SUNBURN
SIGNIFICANCE

- **MAY REQUIRE HOSPITALIZATION**
- **INCREASE RISK FOR FURTHER INJURIES**
- **IMPACT ON READINESS**
- **ARE USUALLY PREVENTABLE**

SUNBURN
PREVENTION

- **LIMIT EXPOSURE**
- **COVER SKIN**
- **USE SUNSCREEN**
- **BE AWARE OF POTENTIAL MEDICATION REACTIONS**

PREDISPOSING FACTORS LEADING TO HEAT INJURIES

- **Lack of acclimatization**
- **History of previous heat injuries**
- **Overweight**
- **Fatigue**
- **Heavy meals / Hot foods**
- **Alcohol intake within 24 hrs**
- **Fever**

PREDISPOSING FACTORS LEADING TO HEAT INJURIES

- **Drugs w/c inhibit sweating**
- **Tight clothing**

MEDICAL EVACUATION
PROCEDURES

- **CALL 911 OR RANGE CONTROL AT CAMP BULLIS**
- **DO NOT ATTEMPT TO TRANSPORT PATIENT YOURSELF UNLESS HELP IS UNAVAILABLE**
- **CONTINUE TO PERFORM REQUIRED FIRST AID UNTIL RELIEVED BY MEDICAL PERSONNEL**

HEAT INJURY PREVENTION

COMPONENTS

- **HEAT STRESS CATEGORY**
- **WATER CONSUMPTION**
- **WORK/REST CYCLES**
- **ACTIVITY RESTRICTION**
- **PROPER NUTRITION**
- **ACCLIMATIZATION**

PREVENTIVE
MEDICINE
K 40

HEAT MONITORING PROCEDURES

- **BASIC RIFLE MARKSMANSHIP HEADQUARTERS (BRM HQ)**
- **COMBAT INDOCTRINATION HEADQUARTERS (CI HQ)**
- **UNIT, PREVENTIVE MEDICINE AND GARRISON MONITORS HEAT STRESS**
- **HEAT CATEGORY PROVIDED TO EOC THEN DISSEMINATED THROUGH COMMAND CHANNELS TO COMPANIES**
- **UNIT FOLLOWS TRAINING GUIDANCE**

HEAT CATEGORY

HEAT CAT.	EASY WORK		MODERATE WORK		HARD WORK	
	WORK/REST	WATER	WORK\REST	WATER	WORK\REST	WATER
1	78-81.9	NL	1/2	NL	3/4	40/20 3/4
2	82-84.9	NL	1/2	50/10	3/4	30/30 1
3	85-87.9	NL	3/4	40/20	3/4	30/30 1
4	88-89.9	NL	3/4	30/30	3/4	20/40 1
5	>90	50/10	1	20/40	1	10/50 1

***NOTE* MOPP GEAR ADDS 10 DEG. F TO WBGT INDEX**

HYPONATREMIA
"WATER INTOXICATION"

Definition:

A less than normal concentration of sodium in the blood, caused by inadequate excretion of water or by excessive water in the circulating bloodstream. In severe cases, the person may develop confusion and lethargy, leading to muscle excitability, convulsions, coma and possible death.

NOTE: **Symptoms may mimic heat exhaustion!!!**

HYPONATREMIA PREVENTION

- Consume no more than 1 1/4 quarts of fluid per hour
- Daily fluid intake should not exceed 12 quarts per training day
- Provide electrolyte replacement drink "Victory Punch" if possible at meals
- Have soldiers indicate the number of quarts consumed per hour on Fluid Intake Cards
- EDUCATE YOUR SOLDIERS

HEAT INJURY CASES

Illness	FY00	FY01
Stroke	3*	0
Exhaustion	49	12
Cramps	26	0
Hyponatremia	5*	0

Indicates a single death

HEAT INJURY PREVENTION

ACTIVITY RECOMMENDATIONS

- **FOLLOW WORK/REST GUIDELINES ON FJ CHART 4**
- **RESTRICT OR MODIFY STRENUOUS PHYSICAL ACTIVITIES DURING HIGH HEAT STRESS CONDITIONS**
- **HAVE SOLDIERS TAKE BREAKS IN THE SHADE AND DRINK WATER**
- **HOLD FORMATIONS IN THE SHADE OR OFF BLACKTOP AND CONCRETE SURFACES WHENEVER POSSIBLE**

HEAT INJURY PREVENTION

ACCLIMATIZATION

- **ALLOW THREE WEEKS FOR SOLDIERS TO BECOME ACCLIMATED TO THE HEAT**
- **PROGRESSIVELY INCREASE THE WORKLOAD DURING THE THIRD WEEK**
- **DURING PERIODS OF SUDDEN TEMPERATURE CHANGE, TREAT ALL SOLDIERS AS NON-ACCLIMATED**

HEAT INJURY PREVENTION

CUMULATIVE EFFECT

- **CUMULATIVE EFFECT**
  - **HEAT EFFECTS BUILD UP DURING THE DAY AND OVER SEVERAL DAYS**
  - **RECOVERY IS SLOW EVEN AFTER IT HAS COOLED**
- **PREVENTION**
  - **DO HEAVY WORK EARLY IN THE DAY**
  - **FOLLOW THE HIGHEST HEAT CATEGORY REACHED FOR THE REMAINDER OF THE DAY**

HEAT INJURY PREVENTION

- **TRAIN THE TRAINER**
  - **UNIT TRAINING**
- **PRESENTATION AT SPRING SAFETY MEETING**
- **VERIFY HEAT INJURY REPORTING PROCEDURES**

HEAT INJURY PREVENTION PROGRAM

- **EARLY AWARENESS**
- **STRONG COMMAND EMPHASIS AT ALL LEVELS**
- **GOOD UNIT TRAINING PROGRAMS**

****RESULTS****

***SMALL NUMBER OF HEAT INJURIES**

***MINIMAL LOST DUTY TIME**

COLD INJURY PREVENTION PROGRAM

COLD INJURIES
CATEGORIES

- **NON FREEZING**
  - **CHILBLAINS**
  - **IMMERSION FOOT**
  - **TRENCH FOOT**
- **FREEZING**
  - **FROSTBITE**
  - **GENERAL HYPOTHERMIA**

CHILBLAIN
SYMPTOMS

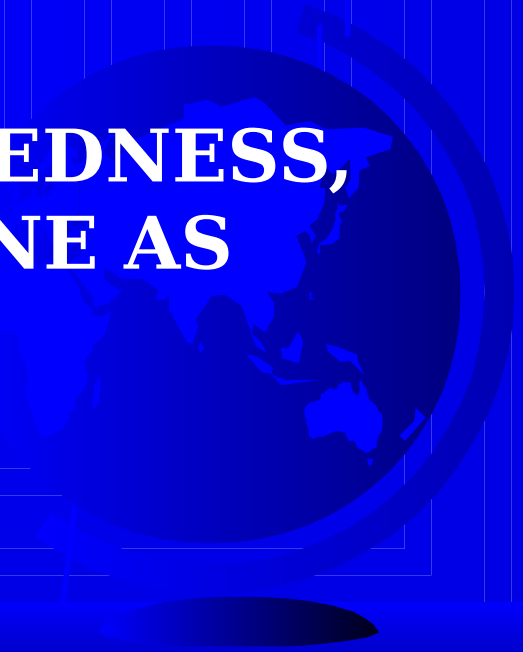
- **HOT, SWOLLEN, RED , ITCHY TENDER SKIN**
- **OPEN LESIONS WILL APPEAR WITH PROLONGED EXPOSURE**

CHILBLAIN
FIRST AID

- **LOCALLY APPLIED REWARMING WITHOUT RUBBING OR MASSAGING**
- **MEDICAL EVALUATION**

IMMERSION SYNDROME
SYMPTOMS

- **AFFECTED PARTS COLD AND NUMB**
- **BURNING, SHOOTING PAIN AS PART WARMS**
- **PALE, BLUISH SKIN**
- **WEAK PULSE**
- **BLISTERING, SWELLING, REDNESS, HEAT, BLEEDING, GANGRENE AS CASES PROGRESS**

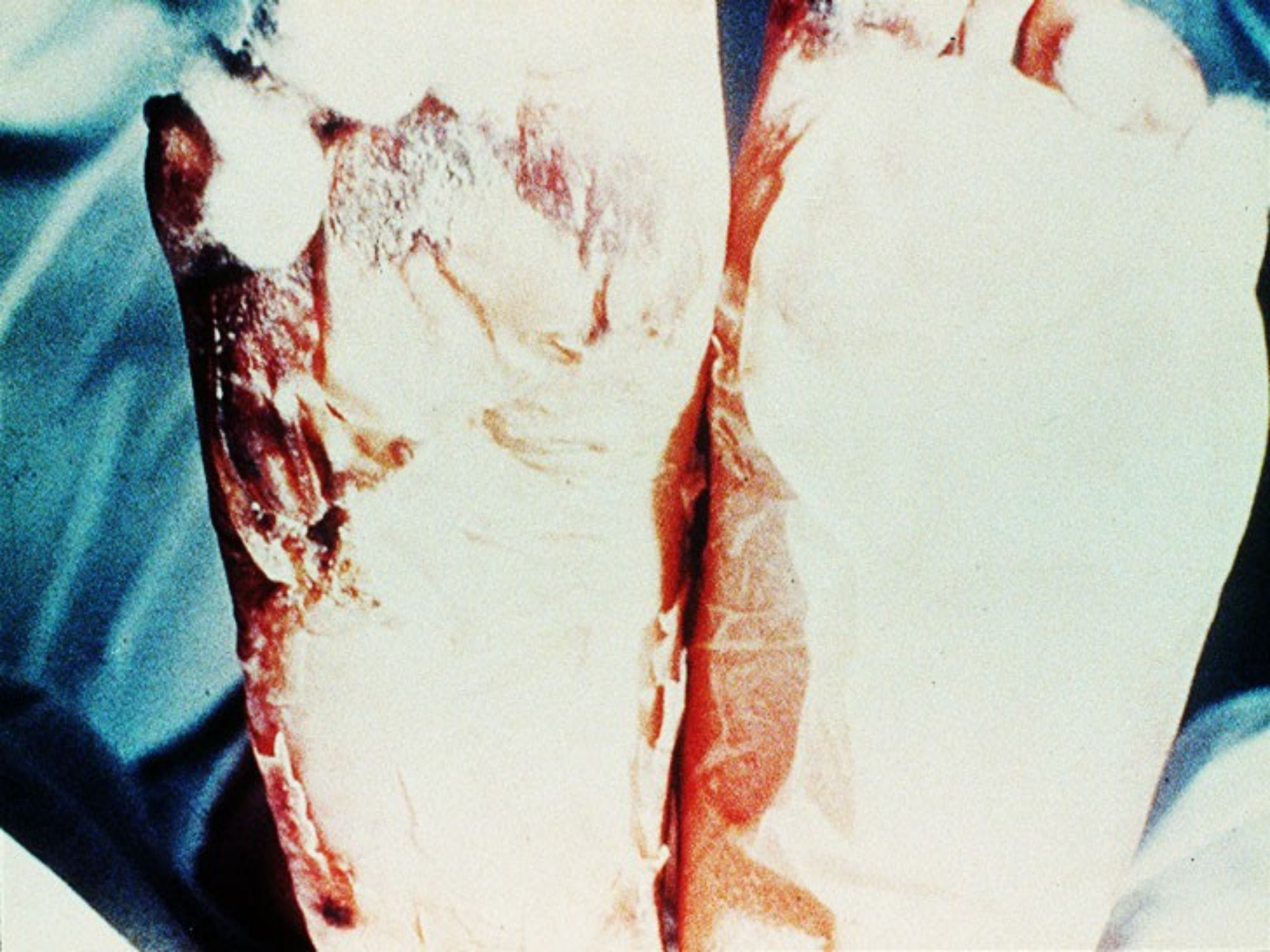


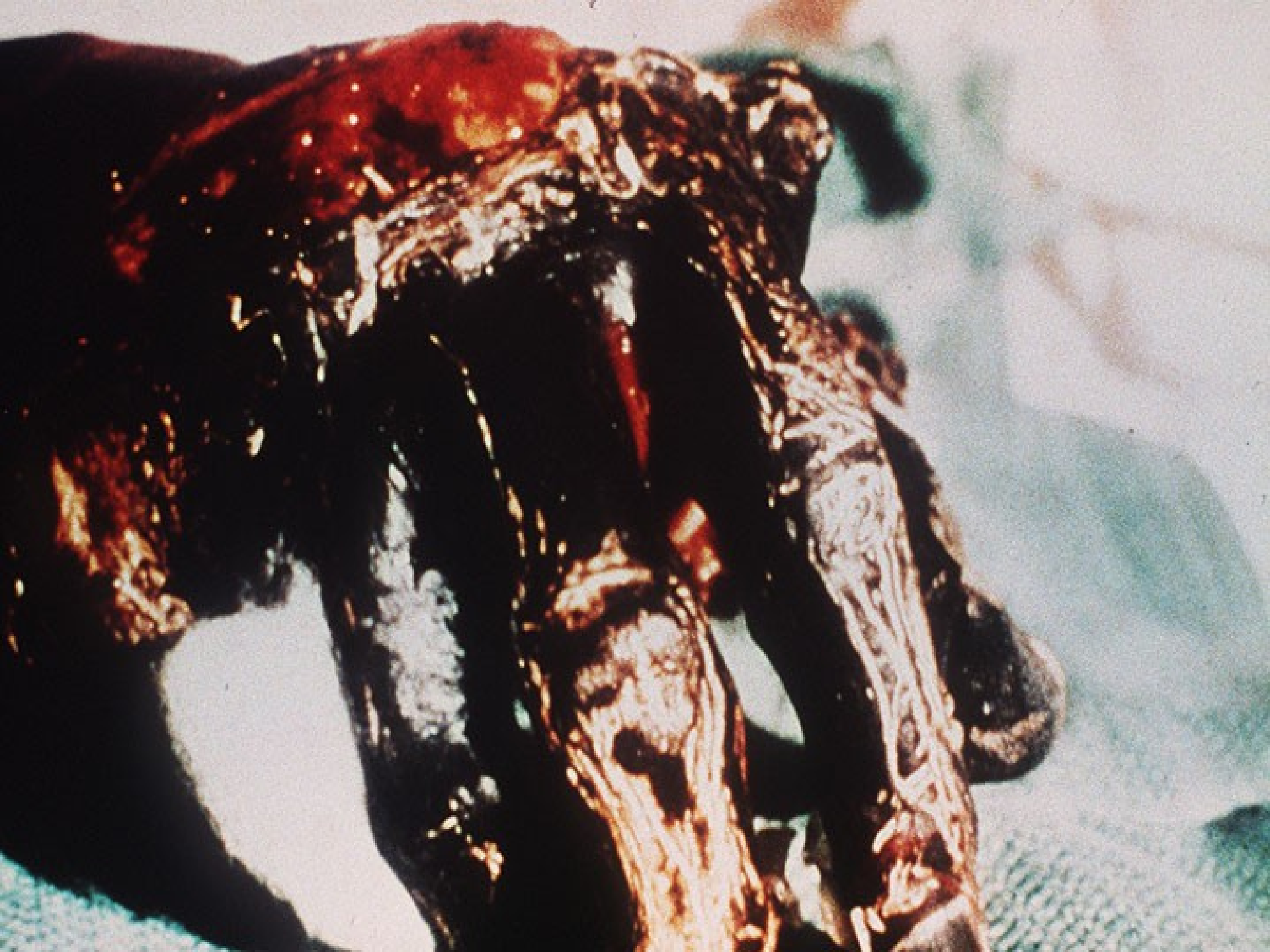
IMMERSION SYNDROME
FIRST AID

- **GRADUAL REWARMING WITHOUT RUBBING OR MASSAGING**
- **ELEVATION OF AFFECTED PART**
- **EVACUATION/MEDICAL EVALUATION**

FROSTBITE
SYMPTOMS

- **DISCOLORATION OF SKIN**
  - **– RED FOR LIGHT SKINNED INDIVIDUALS**
  - **– GRAY FOR DARK SKINNED INDIVIDUALS**
- **TINGLING, NUMBNESS OF AFFECTED PART**
- **BLISTERED, PALE, YELLOWISH AND WAXY SKIN**
- **WHEN PAIN STOPS, LOOK FOR FROSTBITE**





FROSTBITE
FIRST AID

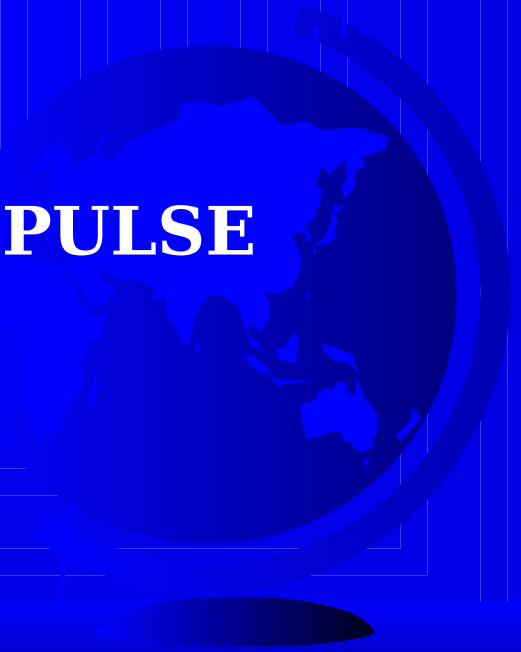
- **LOCAL REWARMING**
  - **FACE: COVER WITH WARM HANDS**
  - **HANDS: PLACE UNDER ARMPITS**
  - **FEET: PLACE AGAINST BODY**
- **DO NOT RUB, MASSAGE OR MANIPULATE**
- **AVOID THAWING FEET IF WALKING**
- **EVACUATION AND MEDICAL EVAL.**

HYPOTHERMIA

- **RESULTS FROM PROLONGED EXPOSURE TO THE COLD**
- **ACTUAL LOWERING OF BODY'S TEMP.**

SYMPTOMS

- **SHIVERING**
- **FREEZING OF THE EXTREMITIES**
- **DROWSINESS, STIFFNESS, FAINT PULSE**
- **LACK OF COORDINATION**
- **MAY RESULT IN DEATH**



HYPOTHERMIA
FIRST AID

- **REWARM BODY EVENLY AND WITHOUT DELAY**
- **KEEP DRY, REPLACE WET CLOTHING**
- **WARM LIQUIDS (IF CONSCIOUS)**
- **CLOSE OBSERVATION, MAY GO UNEXPECTEDLY INTO CARDIAC ARREST**
- **EVACUATE IMMEDIATELY**

COLD INJURY
HOST FACTORS

- **RANK**
- **PREVIOUS COLD INJURY**
- **FATIGUE**
- **DISCIPLINE, TRAINING, EXPERIENCE**
- **RACE/GEOGRAPHIC ORIGIN**
- **POOR NUTRITION, DEHYDRATION**
- **DRUGS, ALCOHOL, TOBACCO**

COLD INJURY
CLIMATE FACTORS

- **TEMPERATURE**
- **WIND**
- **PRECIPITATION**
- **HUMIDITY**

COLD INJURY
ACTIVITY FACTORS

- **TYPE OF COMBAT ACTION**
- **MOBILITY**
- **LENGTH OF EXPOSURE**

COLD INJURY PREVENTION
COMMAND ACTIONS

- **CONTROL INJURY CONTROL OFFICER/NCO**
- **PLAN OPERATIONS AROUND WEATHER**
- **PROVIDE REWARMING TENTS AND HOT LIQUIDS**
- **CARBON MONOXIDE PRECAUTIONS**
- **FREQUENT ROTATIONS**
- **USE BUDDY SYSTEM**

COLD INJURY PREVENTION

INDIVIDUAL MEASURES

- **PROPER FOOT MAINTENANCE**
- **AVOID DRUGS, ALCOHOL, TOBACCO**
- **EAT ALL MEALS**
- **REPLENISH FLUIDS**
- **DRESS IN LAYERS**
- **REMOVE AND REPLACE WET CLOTHING**
- **AVOID OVERHEATING**
- **AVOID IMMOBILITY**

COLD INJURY PREVENTION

- **TRAIN THE TRAINER**
  - **UNIT TRAINING**
- **PRESENTATION AT FALL SAFETY MEETING**
- **UTILIZE FJ CHART 28**
- **VERIFY COLD INJURY REPORTING PROCEDURES**

COLD INJURY PREVENTION

BENEFITS

- **PREVENTION OF INJURIES**
- **EARLY IDENTIFICATION AND TREATMENT**
  - **LESS TIME LOST**
  - **LESS SEVERE INJURY**
- **COMBAT ADVANTAGE**